



**UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

D/C

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/374,704	08/12/99	BAIRD	E 238/298

LYON & LYON LLP  
633 FIFTH STREET  
SUITE 4700  
LOS ANGELES CA 90017

HM12/0706

EXAMINER

EPPS, J

ART UNIT

PAPER NUMBER

1635

DATE MAILED: 07/06/00

5

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**



# Office Action Summary

Application No.  
**09/374,074**

Applicant(s)

**Dervan et al.**

Examiner

**Janet Epps**

Group Art Unit  
**1635**



☒ Responsive to communication(s) filed on Aug 12, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1035 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claim

☒ Claim(s) 1-26 is/are pending in the application

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-26 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

☒ Notice to counsel - - -

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —



Art Unit: 1635

## **DETAILED ACTION**

### ***Sequence Information***

1. This application contains sequence disclosures that are encompassed by the definitions for amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 CFR 1.821 through 1.825 for the reason(s) set forth on the attached Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures. There are multiple citations of the amino acid sequence "RPRRRR" in the specification. According to the sequence rules a peptide sequence of 4 or more amino acids must be listed on the Sequence listing and given the appropriate sequence identifier. Furthermore, Applicants have not provided a paper copy of the sequence listing as a separate part of the disclosure.

2. A complete response to this Office action requires compliance with the sequence rules, 37 CFR 1.821 - 1.825. Failure to comply with these requirements will result in ABANDONMENT of the application under 37 CFR 1.821(g). Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a). In no case may an applicant extend the period for reply beyond the SIX MONTH statutory period. Direct the reply to the undersigned. Applicant is requested to return a copy of the attached Notice to Comply with the reply.



Art Unit: 1635

***Drawings***

3. The drawings submitted for this application are objected to by the Draftsperson under 37 CFR 1.84 or 1.152 for the reasons indicated on the attached PTO-948.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 1 and those dependent therefrom (claims 2-19, and 23-26) recite: “[i]n a polyamide which specifically binds to base pairs in the minor groove of a DNA molecule, the improvement comprising”, this phrase is vague and indefinite since the actual structure applicants are referring to is unknown. One of ordinary skill in the art would not know how to improve a compound of unknown chemical structure. Furthermore, it is unknown if the recited “improvement” is actually an improvement over the recited polyamide since the structure of the polyamide is unknown.

7. Claims 20-23 recite abbreviations such as Hp, Py, and Im. At the first occurrence of these abbreviations a full description of their meaning is required.



Art Unit: 1635

8. Claim 24 recites "[a] polyamide of claim 1 selected from the group consisting of", this phrase is vague and indefinite since it is unclear if the claimed polyamide represents a polyamide comprising the "improvement" or an unmodified polyamide.

9. Claims 2, 5-6, 22-23, and those claims dependent therefrom, recite the phrase "and derivative thereof", the metes and bounds of this phrase is vague and indefinite since it is unclear what combinations Applicants are referring to.

10. Claims 2, 5-6, 22-23, and those claims dependent therefrom, appear to claim a Markush group without the proper use of the Markush format. Alternative expressions are permitted if they present no uncertainty or ambiguity with respect to the question of scope or clarity of the claims. The metes and bounds of this Markush group is indefinite because it is unclear if the members of this group are mutually exclusive. One acceptable form of alternative expression, which is commonly referred to as a Markush group, recites members as being "selected from the group consisting of A, B and C." See *Ex parte Markush*, 1925 C.D. 126 (Comm'r Pat. 1925).

11. Claim 11 recites the limitation "the R-2-amino group" in claim 10. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.



Art Unit: 1635

13. Claims 1-8, 25-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Feng et al.

Feng et al. disclose a polyamide compound, the Hin Recombinase DNA binding protein. This polyamide specifically interacts with the minor groove of DNA utilizing the sequence Gly<sub>139</sub>-Arg<sub>140</sub>-Pro<sub>141</sub>-Arg<sub>142</sub> at the carboxyl terminal domain, and binds to the major groove involving a helix-turn-helix  $\alpha$ -helix motif. The binding of the Hin Recombinase to DNA results in a site-specific inversion reaction at the site of binding. This specific inversion reaction can be used to activate or inactivate gene expression.

Feng et al. teach each and every aspect of the instant invention thereby anticipating Applicant's claimed invention.

14. Claims 1, 5, 9, and 25-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Bruice et al.

Bruice et al. disclose polyamide compositions that incorporate the tripyrrole peptide of the minor groove binding distamycin class of compounds and additional polyamide ligands that can interact with phosphodiester bonds and extend outwards from the minor groove. Bruice et al. disclose specific compounds which are strong minor-groove binders, this feature of these compounds is associated with the electrostatic interaction of the positively charged polyamide side chain with phosphodiester linkages. Furthermore, these compounds can be used to catalyze hydrolysis of DNA and thereby inhibit gene function.

Bruice et al. teach each and every aspect of the instant invention thereby anticipating Applicant's claimed invention.

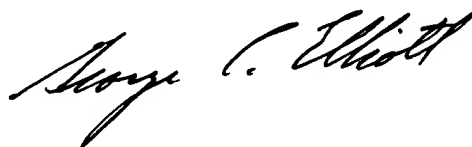


Art Unit: 1635

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janet L. Epps whose telephone number is (703) 308-8883. The examiner can normally be reached on Monday through Friday from 8:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Elliott, can be reached at (703) 308-4003. The fax number for this group is (703) 305-7939.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.



George C. Elliott, Ph.D.  
Supervisory Patent Examiner  
Technology Center 1600

Janet L. Epps, Ph.D.

July 5, 2000